1. Specifications

Enclosure — Metal

IR Extension — Transceiver: (1);
Receiver: (1)

***Maximum Extension Distance** — 500 feet (150 m) at 1920 x 1080p;
270 feet (80 m) at 4096 x 2160

Maximum Video Resolution — Up to 4K (4096 x 2160)

User Controls — (1) Slide switch: Auto Power Saving/Normal/Long Reach

Connectors — Transmitter: (3) RJ-45 Ethernet ports, (1) DB9 F DCE;
Receiver: (3) RJ-45 Ethernet ports, (1) DB9 M DTE

Indicators — Transmitter: (4) LEDs: (1) dual-color Status LED, (3) single-color LAN LEDs;
Receiver: (4) LEDs: (1) dual-color Status LED, (3) single-color LAN LEDs

Power — (1) 48-VDC power supply (PoE, provides power from Tx to Rx)

Size — 5.5"H x 3.4"W x 1.4"D (14 x 8.5 x 3.4 cm)

Weight — Transmitter: 1.10 lb. (0.502 kg);
Receiver: 1.08 lb. (0.493 kg)

*Distance depends on the characteristics and quality of the cable and the type of HDMI source and display.

2. Overview

2.1 Features

- Compatible with HDBaseT™ PoH standard.
- Sends an HDMI signal to multimedia displays over CAT5e/6 cable up to 500 feet (150 meters) from the source using only a single PSU. HDBaseT™ technology ensures reliable transmission and superb video quality.
- Transmits full uncompressed 4K video and audio over cable.

- 100BASE-T Ethernet Pass-Thru enables the extender to simultaneously distribute HDMI and Ethernet streaming video from source to display.
- Uses low-cost standard CAT5e/6 LAN cable.
- Complies with HDCP and is Blu-ray ready.s
- Supports Deep Color, HD-3D video and HD audio formats.
- Supports resolutions up to 4K (4096 x 2160).
- Uses bidirectional LAN and serial communications.
- Supports IR extension.
- Line Powered—A single power supply connects to either the transmitter or receiver.
- Compact size; easy to set up; simple to install.
- Ideal for hotels, conference rooms, control rooms, digital signage (airports, shopping malls), surveillance cameras, and whole-home networking applications.

2.2 What's Included

Your package should include the following items. If anything is missing or damaged, contact Black Box Technical Support at 724-746-5500 or info@blackbox.com.

- (1) Transmitter Unit
- (1) Receiver Unit
- (1) 48-V, 0.83-A power adapter with cord
- This user's manual
- (2) sets of foot pads
- (1) IR external sensor kit

You might also need:

- HDMI cable
- Serial cable

2.3 Cabling Requirements

HDMI transmission over CATx Ethernet cabling is susceptible to electromagnetic interference (EMI) or radio-frequency interference (RFI). This may occur if the extender units are too close to fluorescent lighting or power cabling. Follow these precautions:

1. Place cables away from fluorescent lights, air conditioners, and machines that are likely to generate electrical noise.
2. Shielded cable is recommended and will improve performance in applications with a high level of EMI or RFI.
3. For superior video quality, uncoiled cables work better than coiled.
4. Solid cable works better than stranded cable. Using stranded cable or cable with 24 AWG or lower diameter may affect the maximum transmission distance.
5. Patched cables can result in signal loss and can shorten transmission distance. For optimal transmission distance, we recommend using only one cable (without any intermediate patches) between transmitter and receiver units.

Other Notices

1. EMI or RFI may cause fuzzy or snowy screens on monitors and TVs. If this happens, restart the displays.
2. Because the system transmits large amounts of data, the temperature on the unit will increase. Do not open the transmitter or receiver unit. They contain no user-serviceable parts.
3. If you are not a registered installer, do not tamper with the transmitter and receiver units. They are housed in a protective sealed enclosure.

2.4 Hardware Description

Figure 2-1 shows the front panel of the transmitter or receiver. Figures 2-2 and 2-3 show the back panels. Table 2-1 describes their components.

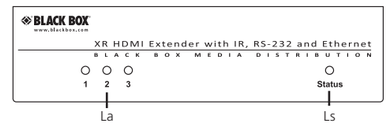

Figure 2-1. Transmitter or Receiver's front panel.

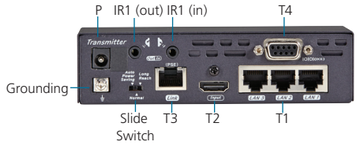

Figure 2-2. Transmitter's back panel.

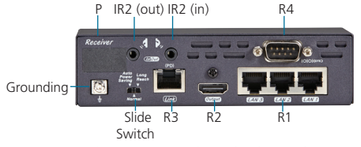

Figure 2-3. Receiver's back panel.

4. Operation

The extender units have LEDs that light when data is being exchanged between the Transmitter Unit and the Receiver Unit.

For a high-quality output signal, make sure you are using a high-quality video source, cable, and display device.

NOTE: The system will disable the video output signal if it detects non-HDCP-compliant display(s) when playing the HDCP video source. All the connected output displays MUST be HDCP compliant when the video source is HDCP compliant.

NOTE: If there is no signal detected from the HDMI port, the baud rate will automatically slow down to 9600 bps.

The LED indicators are described in Table 2-1.

Slide switch: Auto/Normal/Long Reach settings

Normal: The extension distance of HDMI signal over CAT5/6 is up to 360 feet (110 m) for 1080p and 270 feet (80 m) for 4K x 2K.

Long Reach: The extension distance of HDMI signal over CAT5/6 will be increased up to 500 feet (150 m) for 1080p, but the unit can not transmit 4K x 2K resolution.

Auto power saving: The extension distance of HDMI signal over CAT5/6 is the same as "Normal," but the unit can automatically save energy for increasing efficiency use.

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VX-HDMI-HBP-TX and VX-HDMI-HBP-RX, version 3

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3. Installation

- Before installation, power off all devices that will be connected to this system.
- Make sure that all devices you will connect are properly grounded.
- Place cables away from fluorescent lights, air conditioners, and machines that are likely to generate electrical noise.

Using EIA/TIA 568B-compliant CAT5e/6 cable, connect the video source to the Transmitter Unit and connect the monitor to the Receiver Unit (LAN ports). Also use industry-standard CAT5e/6 cable (EIA/TIA 568B compliant) between the Transmitter (Link Port) and Receiver Unit (Link Port). After all devices are connected, attach the provided power cord to an appropriate power source and plug the opposite end into the power connector* on the transmitter or receiver.

CAUTION: The CAT5e/6 cables that connect the Transmitter and Receiver Units carry electrical current and should not be plugged into other devices, because they may cause damage to them. We strongly recommend marking the CAT5e/6 cables you are using with this product at both locations for easy identification.

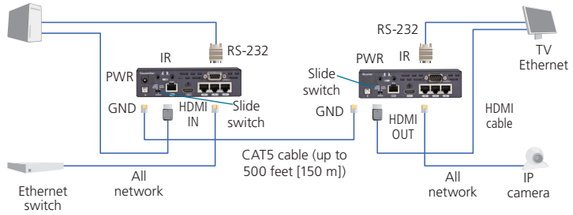

Figure 3-1. Typical installation.

NOTE: For phantom power, only one power adapter is required to power the entire system. You can connect the power adapter to either the transmitter unit OR the receiver unit.

BLACK BOX

VX-HDMI-HBP-TX
VX-HDMI-HBP-RX

4K HDBaseT HDMI Extender

Extend the distance up to 500 feet (150 m) over CAT5e or higher cable with a single PSU.

User Manual

Customer Support Information

Order toll-free in the U.S.: Call 877-877-BBOX (outside U.S. call 724-746-5500) • FREE technical support 24 hours a day, 7 days a week: Call 724-746-5500 or fax 724-746-0746
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